IN THE SPECIFICATION

Please amend the specification as follows:

On page 1, lines 6-8:

This application is a divisional application of US Patent Application Serial Number 09/_____ and further claims the benefit of priority of United States provisional patent application Serial Number 60/161,493 filed October 26, 1999 ~~10/26/99~~, both of which are ~~is~~ incorporated herein by reference in their ~~its~~ entirety.

Please insert the following headers and paragraphs after the paragraph above and before the section entitled "Background of the Invention."

GOVERNMENT SUPPORT

The invention was made with government support under grant numbers HL-56989, HL-57505 and HL-07444, all awarded by the National Institutes of Health . The government may have certain rights in the invention.

SEQUENCE LISTING

A sequence listing filed in accordance with 37 C.F.R. §1.82appended hereto is hereby incorporated by reference.

On page 5, lines 7-25:

Additionally, the invention overcomes the deficiencies of prior art detection methods for atherosclerotic lesions by the use of IK17. The invention describes a new method to non-invasively image the atherosclerotic lesions themselves by the use of the use of a Fab conjugated to an appropriate molecule for detection. This further provides a means for particular discrimination of lipid rich components and oxidation rich components *in vivo*.

The non-invasive nature of the imaging method using the invention reduces cost and risks to the patient allowing the method to be used as a means to monitor the effects of a treatment regimen, as well as a primary detection method. Detection methods for use with the instant invention include, but are not limited to,magnetic resonance imaging (MRI), computer axial tomography (CAT) scan, positron emission tomography (PET) scan, electron beam, computed tomography (CT) scan, single photon emission computed tomography (SPECT) imaging, gamma imaging, angiography, intravascular ultrasound, and intravascular radioactive and fluorescent detection. The imaging method disclosed herein is more sensitive than previous methods allowing for the detection of atherosclerosis, both coronary and non-coronary, before the occurrence of significant stenosis, allowing for earlier intervention. It also provides a means for observing the vessel itself and assaying the amount of lipid present in the lesion, providing a prognostic indicator and a method to grade the pathology of the lesion. It is a method to quantitatively monitor the effects of a treatment regimen as human antibodies will not induce an immune response. This type of surveillance cannot be performed with murine antibodies due to the potentially life threatening immune response to repeated administration of non-human antibodies.

On page 6, lines 5-17:

The invention herein is the discovery of a human monoclonal Fab that we have named IK17 that binds specifically to both OxLDL and MDA-LDL, but not native LDL, and uses of the Fab in the improved detection and treatment of atherosclerosis. This is the first discovery of an antibody that recognizes two forms of modified LDL. IK17 was isolated from a phage display library prepared from RNA from PMNCs from a donor with coronary heart disease. It was found to be specific to Cu-OxLDL and MDA-LDL by a number of direct and competition binding assays using purified LDL. It was also found to be highly effective in a macrophage uptake assay, inhibiting the phagocytosis of both OxLDL and

apoptotic cells. Additionally, the Fab was found to be useful for labeling atherosclerotic plaques, both *in vitro* and *in vivo.* Radioactively labeled IK17 injected into mice was found to co-localize to atherosclerotic plaques as determined by Sudan™ staining.

On page 8, lines 24-31:

As the sequence of IK17(SEQ ID 1 and SEQ ID 2) is cloned it could be easily manipulated for a number of purposes. The coding sequence for linker amino acids, such as lysine or cystiene could be added for modification of IK17 with imaging or therapeutic agents. The pharmacodynamic properties of the antibody could be changes to increase stability, plasma clearance and tissue uptake. The sequences of the antigen recognition region could be mutagenized and subjected to additional rounds of screening with phage display against different model compounds to identify other OxLDL binding antibodies.

On page 10, lines 14-20:

Cultures were grown and plasmid DNA was isolated for sequencing using an automated sequencer (ABI Prism®). Nucleotide sequences were analyzed using the EMBL/GenBank database. Analysis revealed that the repertoire of Fab of the invention light chain uses a v-kappa 3 family gene (Vg/38k/L6) with the rearrangement to Jk2. The repertoire of heavy chain uses a VH3 family gene, 3-23/VH26c/DP47, with the rearrangement to JH4b.

On page 12, lines 8-22:

Phagocytosis assay: Phagocytosis of apoptotic thymocytes was determined as described by Chang et al., 1999. Macrophages were elicited and plated as described above. Cells were treated with dexamethasone and and suspended in 0.5 ml of PBS with 0.1% BSA and labeled with Calcein AM® from Molecular Probes for 15 minutes at 37°C. Cells were washed and resuspended in supplemented DMEM. To assess phagocytosis,

labeled apoptotic thymocytes were added to macrophage containing wells in the absence or presence of IK17 or non-human Fab as competitor, and incubated at 37°C for 90 min. Wells were washed. Macrophages were harvested and fixed. Fluorescence was analyzed by FACS. Cells were sorted by size to select for macrophages and not smaller cells. Fluorescent labeling of macrophages indicated the uptake of the labeled apoptotic cells. These studies revealed that the uptake of apoptotic cells was inhibited by 43% by IK17, indicating that IK17 is able to mask the epitope on apoptotic cells that is recognized by macrophage scavenger receptors.

On page 16, lines 2-21:

^{99m}Tc-labeling of oxidation specific antibodies has been previously described (Tsimikas et al., 1999). ^{99m}Tc-IK17 intravenously injected into atherosclerotic and normal mice and rabbits and is analyzed for the pharmacokinetics, organ distribution and aortic plaque uptake. For *in vivo* imaging, 1-5 mCi are intravenously injected in hypercholesterolemia prone rabbits and imaging performed with a dual detector ADAC vertex model gamma camera set to a 20% window for ^{99m}Tc (VXUR collimator) equipped with ADAC Pegasys™ computer software. *In vivo* images planar (anterior, posterior and 45° oblique positions) and SPECT will be acquired on a 256 X 256 X 12 matrix for a minimum of 1 X 10^6 counts at 10 minutes post injection. Repeat imaging is be performed for 3-500,000 counts at various timepoints based on the optimal target to background ratio derived from *in vivo* uptake data. Imaging studies using whole Mab often had a low signal to noise ratio due to the prolonged half-life of the ^{99m}Tc-MAb in the circulation. Injections of the antigen, prior to imaging speed plasma clearance of the antibody, reducing the background for imaging. The use of Fab, scFv, or smaller fragments, can abrogate this problem under certain imaging conditions as the Fabs and scFvs have a very short half lifes (<30 minutes) and injection of antigen may not be required. When the signal to noise ratio is not favorable, injections of MDA-LDL, Cu-OxLDL, or other appropriate antigen is

injected to clear the background signal.